CLOSED LOOP CONTROL OF EXCITATION PARAMETERS FOR SWITCHED-RELUCTANCE MOTORS

ABSTRACT OF THE INVENTION

A system and method for controlling the turn-on and turn-off angles of a switch reluctance motor. A control system is provided that comprises: a turn-on controller that includes a first component for controlling a turn-on angle during low speed operations and a second component for controlling the turn-on angle during high speed operations such that transitions between low speed and high speed occur naturally; and a turn-off controller having an algorithm for controlling a turn-off angle, wherein the algorithm calculates the turn-off angle as a function of rotor speed, reference peak phase current, and a set of curve fit parameters.